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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,665	07/15/2003	Yasutakaq Ito	238761US-90CONT	5882
22850	7590	01/13/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			PAIK, SANG YEOP	
			ART UNIT	PAPER NUMBER
			3742	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/618,665

Applicant(s)

ITO ET AL.

Examiner

Sang Y Paik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/18/04, 9/27/04, 6/21/04, 8/21/04, 8/14/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 24 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what structure or shape is encompassed within the keyhole shape since there is a numerous shapes and forms that can constitute a keyhole.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12-14, 16, 18-22 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arena et al (US 5,635,093) or Ito et al (US 6,072,162) in view Sasada et al (US 5,176,451) or Tymkewicz (US 4,259,123) or Huebscher (US 3,751,305).

Arena shows the ceramic heater claimed including a plurality of heating elements formed on a surface of a ceramic plate made of boron nitride, a bottomed hole formed on the opposite side of the heating surface for placing a temperature-measuring element such as a thermocouple therein, the bottom hole is formed is formed nearer to the heating surface approximately having a distance between the bottomed hole and heating surface more than $\frac{1}{2}$ thickness of the ceramic

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plate as can be shown in Figure 2. Arena further shows a control unit for supplying electric power to a plurality of plurality of heating circuits, a memory unit and operating/regulating unit for storing the measured temperature and for processing the power necessary to achieve the desired heating temperature. Ito also shows a ceramic heater with a plurality of heating elements formed on the surface of a ceramic plate made of a nitride ceramic whose thickness is about 3 mm. Ito further teaches that a temperature sensing device such as a thermocouple is embedded in the ceramic substrate. However, neither Arena nor Ito shows a fixing device for fixing and pressing the temperature sensor against the bottom portion of the bottomed hole.

Sasada shows a temperature-measuring device such as a sheathed thermocouple having a fixing device including a spring to continuously press the thermocouple against the surface whose temperature is being measured by the thermocouple. Tymkewics and Huescher also show a temperature-measuring device such as a sheathed thermocouple having a fixing device including a spring to continuously press the thermocouple via a rod member against a bottom portion of a hole. Tymkewics and Huescher further show a screw member that is screwed into the hole and to support the thermocouple.

In view of Sadada or Tymkewics or Huescher, it would have been obvious to one of ordinary skill in the art to adapt Arena or Ito with the fixing device including the spring and/or a screw member along with a rod body to support the thermocouple and to enable the thermocouple to come in close contact with the temperature measuring surface so that a more accurate temperature measurement can be made.

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5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arena or Ito in view Sasada or Tymkewicz or Huebscher as applied to claims 12-14, 16, 18-22 and 27 above, and further in view of Ogawa et al (US 5,360,269) and Bingham (US 3,317,353).

Arena or Ito in view Sasada or Tymkewicz or Huebscher shows the ceramic heater claimed except the sheathed temperature-measuring device having MgO and alumina powders.

Ogawa shows a sheathed thermocouple having the MgO or alumina refractory materials to cover the thermocouple. Bingham shows that it is well known in the art to use MgO as the insulating refractory powders as insulating materials to insulate the thermocouple. In view of Ogawa and Bingham, it would have been obvious to one of ordinary skill in the art to adapt Arena or Ito, as modified by Sasada or Tymkewicz or Huebscher, with the MgO and alumina powders to insulate the thermocouple from its outer sheath member to electrically insulate the thermocouple from its outer metallic sheath.

6. Claims 17 and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arena or Ito in view Sasada or Tymkewicz or Huebscher as applied to claims 12-14, 16, 18-22 and 27 above, and further in view of Matsushita et al (JP 09-45752).

Arena or Ito in view Sasada or Tymkewicz or Huebscher shows the ceramic heater claimed except the temperature measuring device being sealed in the bottomed hole with an insulator.

Matsushita shows a temperature measuring device disposed in a bottomed hole with an insulator to seal the temperature measuring device therein. Matsushita further shows the temperature measuring device having a straight and a crooked portion when making a thermal contact with the temperature measuring surface.

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In view of Matsushita, it would have been obvious to one of ordinary skill in the art to adapt Arena or Ito, as modified by Sasada or Tymkewicz or Huebscher, with the insulator to thermally seal the temperature measuring device and further adapt with the crooked portion to increase a thermal contact portion of the temperature measuring device along the temperature measuring surface. Furthermore, it would have been obvious to provide the bottom hole shape as a keyhole or any other shapes that would conveniently allow the disposition of the temperature measuring device into the ceramic substrate.

Response to Arguments

7. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (9:00-4:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Paik

Sang Y Paik
Primary Examiner
Art Unit 3742

syp